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PATENT SPECIFICATION

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(54) TURN-AROUND DEVICE FOR MOTOR VEHICLES

(71) I, THOMAS COLEMAN, a British Subject, of 47 Firbank Road, Royton, Oldham, Lancashire, do hereby declare the invention for which I pray that a patent may be granted to me, and the method by which it is to be performed, to be particularly described in and by the following statement:—

This invention concerns a turn-around device for motor vehicles, that is to say a device onto which a motor vehicle can be driven, and which can then be swung or rotated about a vertical axis to bring the vehicle to a position facing opposite to that in which it was driven onto the device.

An object of this invention is to provide a device as aforesaid suitable for installation in the driveway of a domestic dwelling house or other restricted location wherein turning around of a vehicle under its own mobility is impossible and whereat it is desirable (e.g. for reasons of safety) for vehicles driving out of the location to emerge in a forward direction and not by reversing.

With this object in view, the present invention provides a turn-around device for motor vehicles, comprising a pair of elongate channel members substantially horizontally disposed and spaced apart parallel to one another by a cross member superimposed upon and rotatable in a horizontal plane relative to a support adapted for resting upon the ground, the ends of the channel members being downwardly inclined to enable a motor vehicle to be driven thereon, the cross member being formed in its underside with an annular bearing groove with which registers an annular bearing groove in the upper surface of the support, the two bearing grooves together defining an annular bearing housing filled with a set of bearing balls.

The arrangement may be such as to provide a vertical axis of rotation for the assembly formed by the cross member and

channel members, this axis being disposed substantially at the centre of such assembly. Alternatively the arrangement may be such as to provide the axis of rotation on the longitudinal vertical centre plane of such assembly but displaced away from the centre thereof towards one end. In such instance one or more rollers or other stabilising members may be provided on the assembly adjacent the other end thereof, to counteract any tendency for the assembly to tip under the weight of a vehicle thereon.

So that a single construction of device can be used with vehicles of various widths, the arrangement is preferably such that the spacing of the channel members on the cross member is variable. To this end the channel members may be secured by bolts accommodated in respective slots in the cross member.

In a preferred installation of the device of the invention the latter is disposed in a location adjacent a shallow pit which is close to the cross member. In such instance the pit can be employed for servicing the underside of a vehicle firstly at one end thereof and then after reversing the disposition of the vehicle by rotating or swinging the device, at the other end thereof.

In order that the invention may be fully understood, it will be described further, by way of example, with reference to the accompanying drawings wherein:—

Fig. 1 is a plan view of a device according to the invention;

Fig. 2 is an enlarged vertical sectional view of the device on line 2—2 of Fig. 1;

Fig. 3 is a detailed view from below of part of the device; and

Figure 4 is a plan view of a further part of the device.

The preferred embodiment of the turn-around device, for a motor vehicle, shown in the drawings and conforming to the present invention comprises a pair of elongate channel members 10 and 11 formed, for

example, of rolled steel, and these are about twelve inches in width and fourteen feet in length, with flanges or sidewalls 12 which are about three inches in depth.

5 These channel members 10 and 11 are secured, by bolting to the upper side of a cross member 13 in the form of a generally rectangular plate-like casting with recesses 14 at two opposite ends for lightness and to
10 provide at each end of the member two outwardly projecting tongues 15, 16 to the upper surfaces of which the channel members 10 and 11 are bolted. This is effected by bolts 17 extending through slots 18
15 in such tongues 15, 16, the arrangement being such that the channel members 10 and 11 lie parallel to one another and are spaced apart one along each of the two opposite ends of the rectangle of the cross member
20 13, with the bolts 17 and slots 18 providing for adjustment of the spacing apart of the channel members 10 and 11 according to the track width of a vehicle with which the device is to be used, it being understood that
25 when the vehicle is driven on to the device the wheels of such vehicle run onto the channel members 10, 11.

At its underside the cross member 13 has integrally formed therewith an annular bearing protrusion 19 in the under surface of which is formed an annular inverted V-sectioned bearing groove 20.

30 Disposed beneath the cross member 13 and resting on the ground or other support surface 22 is a generally circular support plate 21, which may be bolted to the ground if desired by use of bolt holes 23 therethrough, and which is of outside diameter substantially equal to the outside
40 diameter of the annular bearing protrusion 19 on the underside of the cross member 13, this support plate 21 has, in its upper surface, an annular V-sectioned bearing groove 24 which matches with and registers with the bearing groove 20 of the cross member
45 13. The two grooves 20 and 24 together define an annular bearing housing which is filled with a circumferential set of bearing balls 25, which may be for example, one and a half inches in diameter. A bolt 26 projecting upwards from the support plate centrally thereof, extends through a central hole 27 in the cross member, to
50 secure the plates 13 and 21 rotatably together.

55 The channel members 10 and 11 are generally linear in form but they are slightly bent down at their ends 28 so that in the disposition described the extreme ends thereof are just clear of the ground and a vehicle can be driven thereon substantially in the same way as a vehicle can be driven onto an elevating ramp such as is employed in garages for repair purposes. It is to be
60 understood that the device of the invention

is not adapted for elevation however, and its basic purpose is to enable a vehicle to be turned around substantially in its own length.

70 Upon the vehicle being driven on as just discussed, the entire assembly consisting of the channel members 10 and 11 and the cross member 13 can be rotated about a vertical axis corresponding to the axis of the belt 26 and the bearing housing, relative to the support plate 21, the bearing balls 25 enabling this to be done with very little effort.

80 As already discussed, the device as aforesaid is conveniently installed in a location, such as the drive of a domestic dwelling house, whereat it is desirable (for reasons of safety) that a vehicle driven into such location should not be reversed out. Once the vehicle is on the device, it can readily be turned around ready to be driven out of the location in a forward direction. If desired, the device can be installed on a driveway between an entrance to a house's short driveway, and a garage at the end of such driveway, in such a way that a vehicle reversed out of the garage runs directly onto the device and can then be turned around for driving out of the driveway.

90 It is to be understood, with the embodiment above-described, that the axis of rotation of the assembly of the channel members and cross member will be substantially at the midpoint of such assembly. Where space considerations so dictate, it is possible for the axis of rotation to be disposed near to one end or the other of the assembly, on a longitudinal vertical centre plane thereof, in which case an additional cross member may be provided between the two channel members, with a downwardly protruding roller or other support member therebeneath for resting on the ground to prevent endwise tipping of the assembly when a vehicle is driven thereon.

110 Other modifications are possible. It is possible for example, for the assembly of the channel members and cross member to be lockable against rotation, and where means are provided for effecting such locking they may be in the form of a key-actuated bolt or ratchet discs. Further, it is not essential for the spacing of the channel members to be adjustable, and a different support arrangement from that described may be provided for permitting the assembly to be rotated.

120 If desired the device may be installed in a disposition with a service pit between the channel members at one end, so that servicing of the underside of one end of a vehicle can be done from the pit and then the vehicle can be turned around for the other end to be serviced.

W. J. Gustaf

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WHAT I CLAIM IS:—

1. A turn-around device for motor vehicles, comprising a pair of elongate channel members substantially horizontally disposed and spaced apart parallel to one another by a cross member superimposed upon and rotatable in a horizontal plane relative to a support adapted for resting upon the ground, the ends of the channel members being downwardly inclined to enable a motor vehicle to be driven thereon, the cross member being formed in its underside with an annular bearing groove with which registers an annular bearing groove in the upper surface of the support, the two bearing grooves together defining an annular bearing housing filled with a set of bearing balls.
2. A device as claimed in Claim 1 wherein the axis of rotation of the assembly formed by the cross member and channel members is disposed vertically substantially at the centre of such assembly.
3. A device as claimed in Claim 1 wherein the axis of rotation of the assembly formed by the cross member and channel members is disposed vertically on the longitudinal vertical centre plane of the assembly, but displaced away from the centre thereof, towards one end.
4. A device as claimed in Claim 1, 2 or 3 wherein the spacing of the channel

members on the cross member is variable.

5. A device as claimed in Claim 4, wherein the channel members are secured to the cross member by bolts accommodated in respective slots in the cross member, which slots permit variation of the spacing of the channel members.

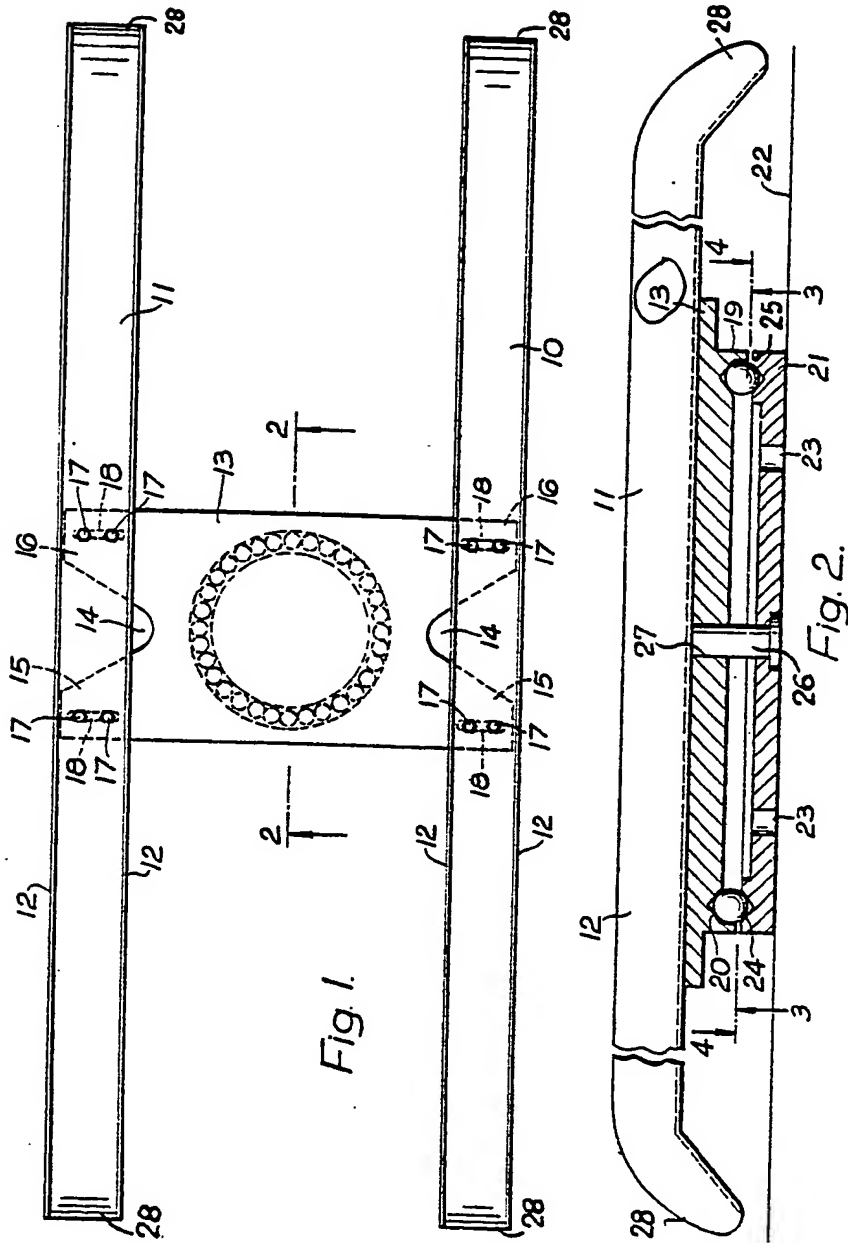
6. A device as claimed in any preceding claim wherein the cross member is substantially rectangular, and is formed with a central downwardly extending protruberance, having the annular bearing groove therein.

7. A device as claimed in any preceding claim, wherein the support is a circular plate, having the respective bearing groove in its upper surface.

8. A device as claimed in Claim 7, wherein the circular plate has holes for bolts to secure the plate to the ground or other supporting surface.

9. A turn-around device for motor vehicles substantially as hereinbefore described with reference to and as illustrated in, the accompanying drawings.

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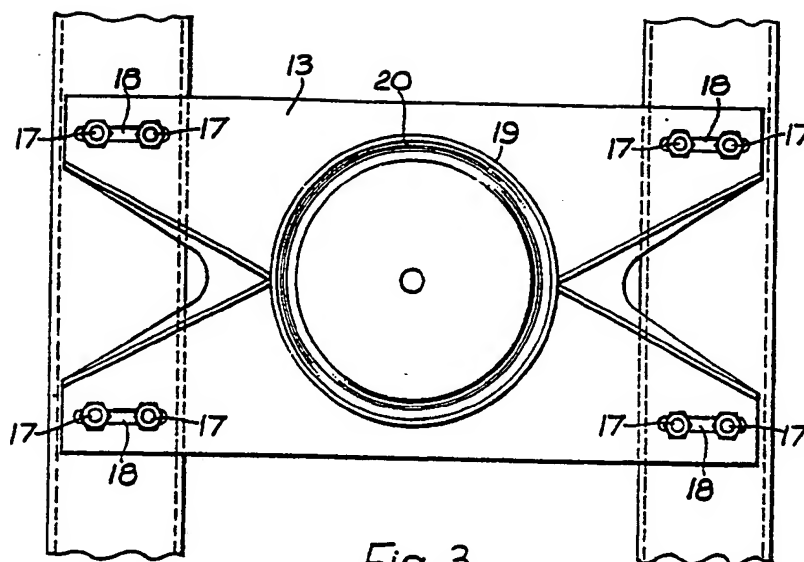


Fig. 3.

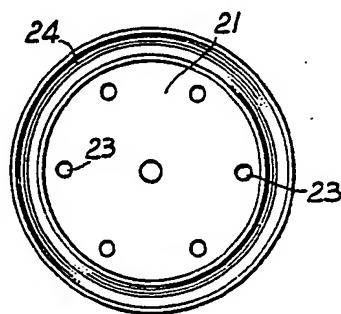


Fig. 4.

